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EXAMINER

SUTTON, TIMOTHY J

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 05/30/2002

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/614,286

Applicant(s)

TANABE, HIROSHI

Examiner

Timothy J Sutton

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Pr i d f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Claims 1-10 in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Makita et al. (U.S. 5,821,562).

Re claim 1, Makita et al. discloses a method for forming a first-property semiconductor film at a desired position on a substrate, comprising the steps of: a) preparing the substrate having a second-property semiconductor film formed thereon

Art Unit: 2813

(see column 30, lines 58-61); b) preparing an optical mask having a predetermined pattern (see column 32, lines 30-35); c) relatively positioning a projection area of the optical mask at the desired position on the substrate (see column 32, lines 30-35); d) irradiating the desired position of the second-property semiconductor film with laser light through the optical mask to change an irradiated portion of the second-property semiconductor film to the first-property semiconductor film (see column 32, lines 43-52); and e) forming an insulation film on at least the first-property semiconductor film and the second-property film (see column 32, lines 53-67).

Re claim 2, where the substrate has an alignment mark previously formed thereon, wherein the alignment mark is used to position the projected area of the optical mask in step (c) (see column 27, lines 39-44).

Re claim 3, wherein the optical mask has an alignment mark pattern, wherein, in the step (d), an alignment mark corresponding to the alignment mark pattern is formed, wherein the alignment mark is visible due to a difference in optical characteristic between the first-property semiconductor film and the second-property semiconductor film (see column 27-19-29).

Re claim 4, where a positioning process after the step (d) is performed with reference to the alignment mark (see column 27, lines 39-44).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2813

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makita et al. in view of Yamazaki et al. (U.S. 5,886,366).

Re claim 5-7, Makita et al. discloses a method for forming a crystalline semiconductor film at a desired position on a substrate, comprising the steps of: a) preparing the substrate having an amorphous semiconductor film formed thereon (see column 30, lines 58-61); b) preparing an optical mask having a predetermined pattern (see column 32, lines 30-35); c) relatively positioning a projection area of the optical mask at the desired position on the substrate (see column 32, lines 30-35); d) irradiating the desired position of the amorphous semiconductor film with laser light through the optical mask to change an irradiated portion of the amorphous semiconductor film to the crystalline semiconductor film (see column 32, lines 43-52); and e) forming an insulation film on the crystalline semiconductor film (see column 32, lines 53-60).

Makita et al. fails to teach forming an insulation film on the amorphous semiconductor film.

Yamazaki et al. teaches the forming an insulation film over the crystalline semiconductor film and the amorphous semiconductor film (column 6, lines 15-30 & 55-67).

It would have been obvious for one in ordinary skill in the art to form an insulation film over the crystalline semiconductor film and the amorphous semiconductor film as taught in Yamazaki et al. because TFT's having active regions made of an amorphous silicon can be formed in a pixel region of the active matrix device on the same

Art Unit: 2813

substrate, which do not have a high field mobility but a low off current property and in this manner, a circuit having both off current TFT's and high speed TFT's can be simultaneously formed on the same substrate (column 5, lines 1-20).

Re claim 8, further comprising the step of f) forming an island comprised of the insulation film and the crystalline semiconductor film by a patterning process, wherein the crystalline semiconductor film of the island is a single-crystal semiconductor film used for source, drain, and channel regions of a field effect transistor (Makita et al., see column 33, lines 38-43).

Re claim 9, wherein the substrate has an alignment mark previously formed thereon, wherein the alignment mark is used to position the projected area of the optical mask in the step (c) (Makita et al., see column 27, lines 39-44).

Re claim 10, as applied to claim 7 above, Makita et al. discloses all of the claimed limitation including the limitation wherein the optical mask has an alignment mark pattern, wherein, in the step (d), an alignment mark corresponding to the alignment mark pattern is formed, wherein the alignment mark is visible due to a difference in optical characteristic between the crystalline semiconductor film and the amorphous semiconductor film (Makita et al., see column 27, lines 19-29).

Response to Arguments

6. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

7. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

Art Unit: 2813

(i.e., the amorphous film corresponding to the second property film) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Examiner notes that applicant noted that there were four different semiconductor films in the Makita et al. reference that are covered by an insulating film.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. 5,696,003 relating to a method for fabricating a semiconductor device using crystalline silicon films, and in particular, to a

Art Unit: 2813


semiconductor device having thin-film transistors formed on a glass or other insulating substrate. U.S. 5,976,988 pertaining to a method of removing an insulating fil or a protective film formed on wirings in a producing method of forming semiconductor devices such as thin film transistors. U.S. 6,136,632 relating to an active matrix substrate suitable for use in active matrix liquid crystal display device and to a method of producing such a matrix liquid crystal display device. U.S. 6,169,292 pertaining to a thin film type monolithic semiconductor device, which has a plurality of thin, film transistors.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J Sutton whose telephone number is 703-305-0070. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

tjs
May 23, 2002


OLIK CHAUDHURI
SUPERVISORY PATENT EXAMINER
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